

HOW TO CRASH-LAND A PLANE ON WATER

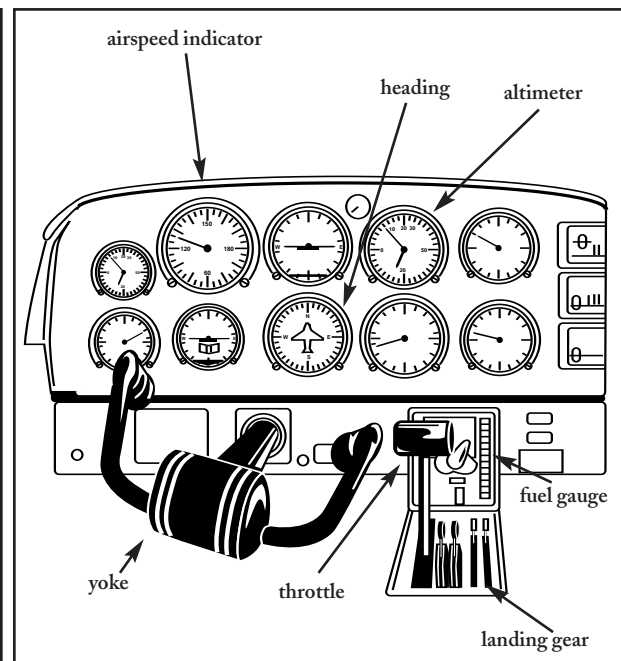
These instructions apply to small passenger propeller planes (not commercial airliners).

1 Take your place at the controls.

If the plane has dual controls, the pilot will be in the left seat. Sit on the right. If the plane has only one set of controls and the pilot is unconscious, remove the pilot from the pilot's seat. Securely fasten your seat belt.

2 Put on the radio headset (if there is one) and call for help.

There will be a control button on the yoke (the plane's steering wheel) or a CB-like microphone on the instrument panel. Depress the button to talk, release it to listen. Say "Mayday! Mayday!" and give your situation, destination, and plane call numbers (which should be printed on the top of the instrument panel). If you get no response, try again on the emergency channel, 121.5. The person on the other end should be able to talk you through proper landing procedures. If you cannot reach someone to talk you through the landing process, you will have to do it alone.



3 Get your bearings and identify the instruments.

YOKE. This is the steering wheel, and it should be in front of you. The yoke turns the plane and controls its pitch. Pull back on the column to bring the nose up, push forward to point it down. Turn it left to turn the plane left, turn it right to turn the plane right. The yoke is very sensitive—move it only an inch or two in either direction to turn the plane. While cruising, the nose of the plane should be about three inches below the horizon.

ALTIMETER. This is the most important instrument, at least initially. It is a black-faced dial in the middle of the panel with white hands and numerals, with zero at the top. The small hand indicates feet above sea level in thousand-foot increments, the large hand in hundreds.

HEADING. This is a compass. It will be the only instrument with a small image of a plane in the center. The nose of the image will point in the direction the plane is headed.

AIRSPEED. This dial is on the top of the instrument panel and will be on the left. It is usually calibrated in knots, though it may also have miles per hour. A small plane travels at about 120 knots while cruising. Anything under 70 knots in the air is dangerously close to stall speed. (A knot is $1\frac{1}{4}$ mph.)

TACHOMETER. This instrument (not visible in ill., but located near the throttle) displays the engine's power in revolutions per minute (rpm). In more sophisticated aircraft, a manifold pressure gauge may be present. This gauge supplies manifold pressure in inches of mercury, and shows you how much power an engine is producing. If present, it should be used in place of the tachometer. (One inch of mercury equals approximately 100 rpm; 10 inches corresponds to 1,000 rpm.)

THROTTLE. This lever controls airspeed (power) and also the nose attitude, its relation to the horizon. It sits between the seats and is always black. Pull it toward you to slow the plane and cause it to descend, push it away from you to speed up the plane and cause it to ascend.

FUEL. The fuel gauges will be on the lower portion of the instrument panel. If the pilot has followed FAA regulations, the plane should have enough fuel for the amount of flying time to your intended destination, plus at least an additional half hour of reserve. Some planes have a reserve fuel tank in addition to the primary one, but do not attempt to change tanks. Full tanks will provide $4\frac{1}{2}$ to 5 hours of flying time for a light aircraft. If the gauge indicates the tanks are half full, you will have half that time. However, be advised that fuel gauges on airplanes can be inexact and experienced pilots do not rely on them. Always assume you have a fuel emergency despite what the fuel gauge may indicate. You want to land the plane as soon as possible to avoid an uncontrolled landing.

MIXTURE CONTROL. This is a red knob or lever on the instrument panel, or between the pilot and co-pilot positions. The knob regulates fuel flow to the engine. Pull it out (toward you) to reduce fuel flow, push it in (away from you) to increase it.

AUTOPILOT. The autopilot panel will be on the lower third of the instrument panel and will generally be to the immediate left or right of the yoke. There will be an on/off switch and separate switches or buttons reading “alt,” “heading,” and “nav.”

FLAPS. The flaps are the moveable parts of the wings that are used to change the speed of the plane and adjust its altitude. Due to their complexity, wing flaps can make the plane hard to control. Use the throttle to control airspeed instead.

4 If the plane is flying straight and level, engage the autopilot.

Press the “alt” (altitude) and heading buttons until the displays read “hold.” This will maintain your present altitude and heading and give you an opportunity to continue to use the radio and assess your landing choices.

5 Once you have determined your landing strategy, turn the autopilot off and reduce power by moving the throttle toward you.

Slowly move the throttle enough to cause the nose to drop and the plane to descend slightly. You will need to be at approximately 2,000 feet to be able to clearly see the water below you.

6 When the altimeter reads 2,000 feet, level the nose with the horizon using the yoke.

Increase power slightly by moving the throttle away from you if pulling back on the yoke does not work.

7 Assess the water ahead of you.

It is imperative that you land in calm water and that you avoid landing the plane in the face of swells, where there is a significant risk of waves breaking over the aircraft. The plane should be heading into the wind (called a headwind), so you land on the backside of any waves.

8 Reduce power by moving the throttle toward you.

Do not use your flaps or your landing gear, which might catch on the water. Bring the plane to an altitude of 100 to 200 feet.

9 Continue to reduce power until the tachometer reads 1,500 to 1,700 rpm or 15 to 17 inches of mercury.

10 Move the nose of the plane up at least 5 to 10 degrees above the horizon by pulling the yoke toward you slightly.

You must exercise a nose-up landing to keep the propeller out of the water and prevent the plane from flipping end-over-end. The angle of the nose should be such that the horizon is almost completely obscured.

11 Just before touchdown, make sure the throttle is in its furthest position toward you.

The plane should be no more than 10 feet above the water at this point.

- 12** Pull the red fuel mixture control knob toward you to cut fuel to the engine when the plane is about five feet above the water.

Use the surface of the water, not the altimeter, to judge your altitude at this low level.

- 13** Keep the nose up by pulling back gently on the yoke. The plane should fall gently onto the water. Concentrate on making sure the rear of the plane hits the water first. If the plane has non-retractable landing gear, it will most likely flip over because the landing gear will catch on the water.

- 14** Open the door or window as soon as you hit the water, and quickly get out of the plane.

It may be difficult to open the door or window once you begin to sink. If you are unable to open the cabin door, kick out the windshield.

- 15** If the plane has life vests or a raft, inflate them outside of the plane.

The plane's emergency location transmitter (ELT) should continue broadcasting your location to rescue personnel.

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